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None

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B6F  
G4H

## (54) Printer

(57) A unit for applying post codes to stationary is used with a conventional automatic mailing machine.

An Inspection device (7) determines whether the address includes a post code prior to input to writer (3). If there is no post code, an extractor (8) derives the relevant post code from a data store (6), for input to summer (9) and then address-writer 3, the post code being applied to the envelope or label in a machine-readable form.

The post code unit 1 may have a videodisc data store 6 containing a post code index catalogued by address.

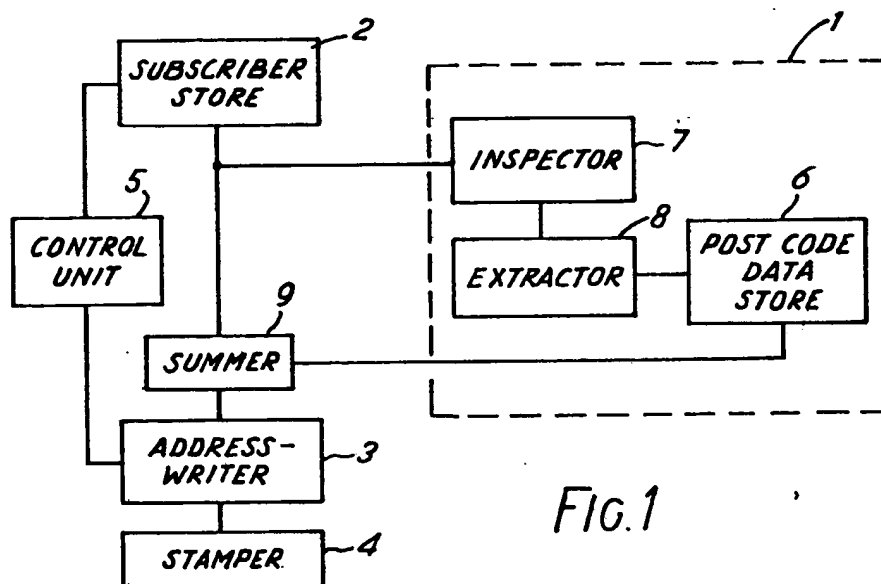


FIG.1

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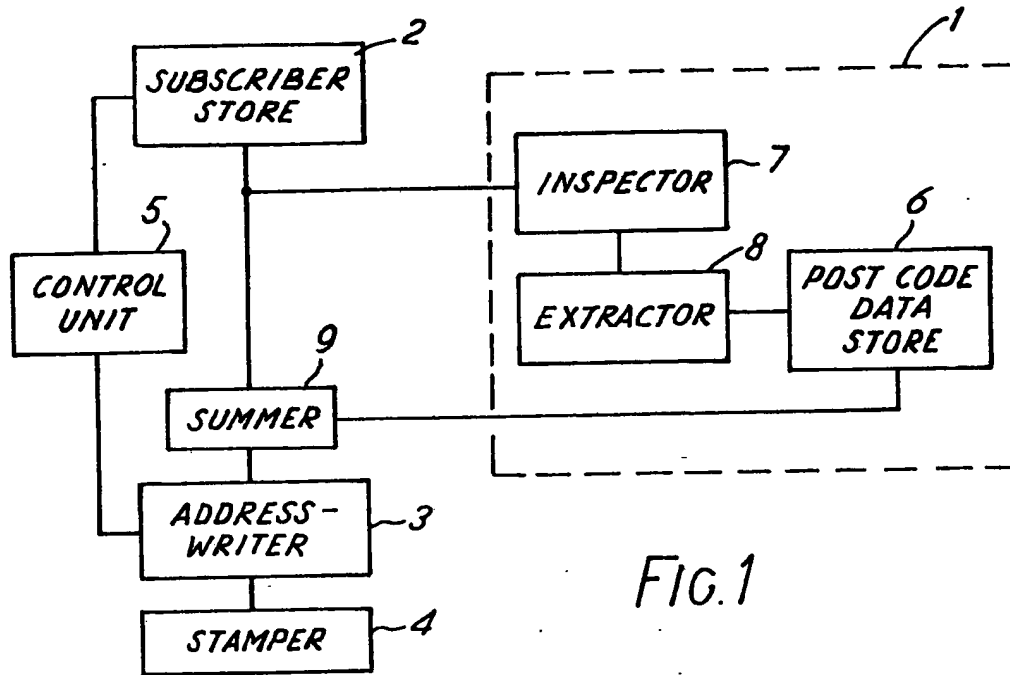


FIG. 1

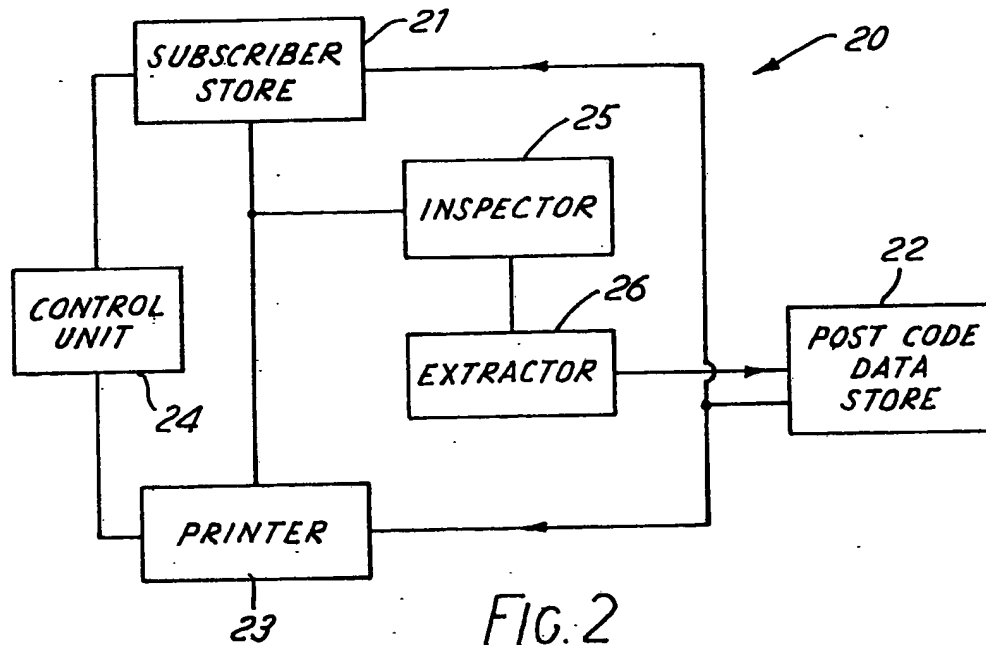


FIG. 2

## SPECIFICATION

## Printer

- 5 The present invention relates to a printer for post codes, particularly but not solely for use in the addressing of mail.

All premises within the United Kingdom have been allocated a post code, which is a  
 10 six or seven digit sequence of letters and numbers identifying the immediate locality. The presence of a post code on mail ensures fast, ready sorting by machines at the sorting offices.

- 15 The present invention provides printing equipment for applying address-information to postal stationary, the equipment comprising:  
 means to inspect a signal representing a postal address to determine whether a post  
 20 code is included;  
 a data store of post codes;  
 means to extract, from the data store, the post code for an address, the extraction means being operable in accordance with the  
 25 output of the inspection means;  
 means to print out a post code extracted from the data store.

Preferably, the printing equipment has print-out means to effect a representation of the  
 30 post code in a readily machine-readable form, for example a sequence of phosphor dots, thereby enabling ready sorting by machines at the sorting office.

Preferably, the extraction means comprises  
 35 means to select a section of the data store appropriate to the designated town in the postal address, and means to sort through a selected section of the data store to determine the appropriate post code. In this way,  
 40 the relevant post code can be found quickly. Preferably the inspection means comprises means to search for the start of a postal address and means to search for the end of a postal address.

- 45 The present invention also provides postal addressing apparatus comprising:  
 a data store of a collection of postal addresses;

means to provide addressing of postal stationary from information output from the address data store;

means to inspect a postal address derived from the address collection store, to determine whether a post code is included;

- 55 a data store of post codes;  
 means to extract, from the data store, the post code for an address, the extraction means being operable in accordance with the output of the inspection means; and  
 60 means to print out a post code extracted from the post code store.

Thus this apparatus can ensure that all envelopes or labels processed by it have the post code included in the postal address,  
 65 whether due to it being present in the address

output from the collection store or by reference to the postal code data store.

- Preferably, the inspection means is arranged to monitor postal addresses, output from the  
 70 address collection store, prior to their input to the addressing means.

Preferably, the apparatus has printing means selectably operable in three modes, namely one in which the print-out is in alphanumeric  
 75 format only, another in a format readily machine-readable only, and another in which the print-out is in both formats.

Preferably, the apparatus has means to insert the appropriate post codes into the information held at the address collection store concerning a given address, the insertion  
 80 means being operable subsequent to operation of the extraction means.

In order that the invention may more readily be understood, a description is now given, by way of example only, reference being made to the accompanying drawing in which:

Figure 1 is a block diagram of printing equipment embodying the present invention as  
 90 used in one application; and

Figure 2 is a block diagram of a stationary-addressing system embodying the present invention.

There is shown in Figure 1 a unit 1 for  
 95 applying post codes to stationary when used in combination with a conventional automatic mailing machine. Typically the mailing machine has a data store 2 which holds the names and addresses of all subscribers or customers  
 100 of the operator, together with information of their needs and/or requirements. There is also an address-writer 3 and a stamping machine 4, all the functions of the machine being controlled and operated by a microprocessor unit  
 105 5.

The post code unit 1 has a videodisc data store 6 containing a general index on post codes catalogued in a manner to enable ready  
 110 retrieval upon enquiry by address; essentially, the store 6 consists of a videodisc player having a magazine of videodiscs for loading into the player, each holding postcodes and addresses corresponding to one or more towns, or the whole postcode area.

Unit 1 also has an inspection device 7  
 115 which optically examines data prior to input to writer 3 and determines whether the address includes a post code. If inspection device 7 considers that there is no post code, it instructs an extractor 8 to derive the relevant  
 120 post code from data store 6, the resultant signal being combined with the address signal at summer 9 before input to address-writer 3, the post code is applied to the envelope or  
 125 label in a phosphor-dot form which is readily machine-readable.

In order to minimise the access time for an appropriate post code from store 6, when inspection device 7 determines there is no post  
 130 code on the envelope/label, it transmits information

mation on the designated town to extractor 8 which immediately loads the relevant videodisc into the player. Thus when the extractor 8 subsequently receives the remaining information (i.e. the addressee's name and road) from inspection device 7, the relevant videodisc has already been selected and is ready for searching. If the store 6 consists of only one videodisc, then again an initial search may be made based on the identity of the town or locality in order to determine the appropriate section of videodisc.

Clearly, the unit 1 need not be used solely in mailing machines but, for example, could be used in an administrative filing system which is based on the use of post codes as a reference number or as a classification of the addressee/household.

There is shown in Figure 2 an automatic stationary-addressing system 20 which incorporates the present invention. The system 20 has: a data store 21 of all subscribers or customers of the operator; a videodisc/player data store 22 of a general index of post codes; a multi-mode printer 23 capable of printing in alphanumeric script and in machine-readable phosphor-dot code, as required; a microprocessor control unit 24; and an inspection device 25 and extractor 26 which operate as described below.

When, under instruction from control unit 24, a signal representing a subscriber's address is output from data store 21 on its way to printer 23, inspection device 25 monitors it in order to look for the absence of a post code. This is readily achieved because the signal is already in a machine-readable form for input to printer 23; for example, the inspection device may look for a control code or pulse in the signal to indicate the start of the address section, and for another control code or pulse to indicate the end of the address section. The inspection device 25 then decides whether the last portion of the address consists of a word (signifying the county or town) or a combination of letters and numbers (signifying the post code).

If inspection device 7 decides that the post code is absent, it instructs extractor 26 to load the videodisc appropriate to the town in videodisc player of store 22, and thereafter sends the remaining address information to extractor 26 in order to locate the appropriate post code. Data store 22 outputs the post code to printer 23 which prints out the code onto an envelope or label in the format(s) (i.e. alphanumeric and/or phosphor-dot) as indicated by control unit 24. This printing may be done at the same time as, or subsequent to the printing of the address. Store 22 also sends information on the post code to store 21 to enable the latter to incorporate the post code in the relevant address held therein.

Printer 23 may be a modified conventional printer; thus for example it may have an im-

pact printing mechanism (e.g. a daisy wheel arrangement) with two ribbons (one for each form of printing), or one ribbon with two bands.

## CLAIMS

1. Printing equipment for applying address-information to stationary, the equipment comprising:

75 means to inspect a postal address to determine whether a post code is included;

a data store of post codes;

means to extract, from the data store, the post code for an address, the extraction means being operable in accordance with the output of the inspection means;

means to print out a post code extracted from the data store.

2. Printing equipment according to Claim 1, comprising print-out means to effect a representation of the post code in a readily machine-readable form.

3. Printing equipment according to Claim 1 or Claims 2, wherein the extraction means comprises means to select a section of the data store appropriate to the designated town in the post address, and means to sort through a selected section of the data store to determine the appropriate post code.

4. Printing equipment according to any one of the preceding claims, wherein the inspection means comprises means to search for the start of a postal address and means to search for the end of a postal address.

5. Printing equipment for applying address-information to postal stationary, the equipment being substantially as hereinbefore described with reference to and as illustrated in Figure 1, or in Figure 2, of the accompanying drawings.

6. Postal addressing apparatus comprising: a data store of a collection of postal addresses;

means to provide addressing of postal stationary from information output from the address data store;

means to inspect a postal address derived from the address collection store, to determine whether a post code is included;

a data store of post codes;

means to extract, from the data store, the post code for an address, the extraction means being operable in accordance with the output of inspection means; and

means to print out a post code extracted from the post-code store.

7. Apparatus according to Claim 6, wherein the inspection means is arranged to monitor postal addresses, output from the address collection store, prior to their input to the addressing means.

8. Apparatus according to Claim 6 or Claim 7, comprising printing means selectively operable in three modes, namely one in which the print-out is in alphanumeric format only,

another in a format readily machine-readable only, and another in which the print-out is in both formats.

9. Apparatus according to anyone of Claims 5 to 8, wherein the extraction means comprises means to select a section of the data store appropriate to the designated town in the post address, and means to sort through a selected section of the data store to determine the appropriate post code.

10. Apparatus according to any one of Claims 6 to 9, wherein the inspection means comprises means to search for the start of a postal address and means to search for the end of a postal address.

11. Apparatus according to any one of Claims 6 to 10, comprising means to insert the appropriate post code into the information held at the address collection store concerning a given address, the insertion means being operable subsequent to operation of the extraction means.

12. Post addressing apparatus substantially as hereinbefore described with reference to and as illustrated in Figure 2 of the accompanying drawings.

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